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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/274,014	03/22/1999	NICOLAS VOUTE	9676-286	7857

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1667 K STREET N W
WASHINGTON, DC 20006

EXAMINER

SORKIN, DAVID L

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 12/19/2002

27

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)
	09/274,014		VOUTE ET AL.
	Examiner	Art Unit	
	David L. Sorkin	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) 23-58 and 64-66 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 59-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>23</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 and 59-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Girot et al. (US 5,445,732), and in the alternative over Girot et al. (US 5,445,732) in view of Davis, Jr. et al. (US 4,203,772). Regarding claim 1, Girot ('732) discloses dense mineral oxide supports comprising a mineral oxide matrix having an external surface and pores; and an interactive polymer network which fills the pores and is coated on the surface of the mineral oxide matrix (see col. 5, lines 3-15 and 40-62; col. 15, lines 38 and 39). Girot ('732) does not explicitly disclose the porosity being "less than 30% of the total volume of the mineral oxide matrix" as claimed. However, Girot ('732) recognizes that a broad range of porosities are suitable for the invention (see col. 8, lines 40-45; col. 15, lines 45-col. 36, lines 12-15). As held in *In re Aller*, 220 105 USPQ 233, 235 (CCPA 1955), "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Therefore, it is considered that the claimed support is unpatentable as it differs from support of Girot ('732) only in that an optimal or workable range of the porosity has been discovered. Although the court referred not only to the "optimum" range, but also the "workable" range, one of ordinary skill in the art would be

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motivated to minimize the porosity because Girot ('732) states that "it is generally desirable to have as great a density difference as possible between the solid support particles and the fluidizing medium" (col. 2, lines 8-11), and "fluidization of dense particles in aqueous suspension is possible at high flow rates that, in turn, are very desirable when dealing with large scale applications". In the alternative, the claim is considered unpatentable over Girot ('732) in view of Davis ('772). Davis ('772) explicitly discloses mineral oxide matrixes having porosities less than 30% (see Tables II and III). It is considered that it would have been obvious to one of ordinary skill in the art to have employed the matrix material of Davis ('772) for the matrix of Girot ('732) because Girot ('732) emphasizes that "[a] wide variety of non-passivated porous solids matrices are amenable to passivation by the general method of the present invention" (col. 5, lines 40-42)". Furthermore, Girot ('732) goes on to specifically suggest "mineral oxide" matrices including oxides of "zirconium" (see col. 5, lines 42-62), providing strong motivation look toward the teachings of Davis ('772), which concern zirconium oxide matrices. Regarding claims 2, 3 and 59, it is considered that the density would intrinsically be in the claimed ranges of 1.7-11 and 2.1-10 if the porosity is less than <30%, because zero porosity zirconium oxide (which both references disclose) has a density of 5.9. Regarding claims 4 and 5, Girot ('732) discloses particle sizes within the claimed ranges of 5-500 microns and 10-100 microns (see col. 8, lines 47-53). Regarding claim 6, Girot ('732) discloses a dense mineral oxide supports comprising a mineral oxide matrix having an external surface and pores; and an interactive polymer network which fills the pores and is coated on the surface of the mineral oxide matrix

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(see col. 5, lines 3-15 and 40-62; col. 15, lines 38 and 39). Girot ('732) further discloses a particle size within the range 10-100 microns (see col. 8, lines 47-53). Girot ('732) does not explicitly disclose the porosity being "less than 30% of the total volume of the mineral oxide matrix" as claimed. However, Girot ('732) recognizes that a broad range of porosities are suitable for the invention (see col. 8, lines 40-45; col. 15, lines 45-col. 36, lines 12-15). As held in *In re Aller*, 220 105 USPQ 233, 235 (CCPA 1955), "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Therefore, it is considered that the claimed support is unpatentable as it differs from support of Girot ('732) only in that an optimal or workable range of the porosity has been discovered. Although the court referred not only to the "optimum" range, but also the "workable" range, one of ordinary skill in the art would be motivated to minimize the porosity because Girot ('732) states that "it is generally desirable to have as great a density difference as possible between the solid support particles and the fluidizing medium" (col. 2, lines 8-11), and "fluidization of dense particles in aqueous suspension is possible at high flow rates that, in turn, are very desirable when dealing with large scale applications". In the alternative, the claim is considered unpatentable over Girot ('732) in view of Davis ('772). Davis ('772) explicitly discloses mineral oxide matrixes having porosities less than 30% (see Tables II and III). It is considered that it would have been obvious to one of ordinary skill in the art to have employed the matrix material of Davis ('772) for the matrix of Girot ('732) because Girot ('732) emphasizes that "[a] wide variety of non-passivated porous solids matrices are amenable to passivation by the

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general method of the present invention" (col. 5, lines 40-42)". Furthermore, Girot ('732) goes on to specifically suggest "mineral oxide" matrices including oxides of "zirconium" (see col. 5, lines 42-62), providing strong motivation look toward the teachings of Davis ('772), which concern zirconium oxide matrices. It is considered that the density would intrinsically be in the claimed ranges of 1.7-11 and 2.1-10 if the porosity is less than <30%, because zero porosity zirconium oxide (which both references disclose) has a density of 5.9. Also, the discussion of Girot ('732) of the advantages of high density were discussed above. Regarding claims 7, 8 and 60, it is considered not inventive to have discovered optimum or workable ranges of porosity as discussed above. Davis ('772) discloses specific porosity values (7.9%, 18.8% etc.) which are within each claimed range (see Tables II and III). Regarding claim 9 and 61, zirconia is disclosed by both references (see Girot '732, col. 5, lines 58-62 and Davis '772, title). Regarding claims 10 and 62, the interactive polymer network comprises a soluble organic polymer crosslinked in place (see col. 15, lines 17-20). Regarding claims 11 and 12, polysaccharides, including dextran, are disclosed by Girot ('732) (see col. 16, line 59). Regarding claim 13 and 15-22, the monomer may be vinylpyrrolidone (see col. 18, line 27), thereby satisfying the each of claims 15-22. Regarding claims 14 and 63, the polymer network comprises monomers copolymerized in place with the mineral oxide matrix (col. 15, lines 17-20).

Response to Arguments

3. Applicant's declaration under 37 CFR 1.132 and arguments have been considered. Carr et al. (US 5,015,373) is no longer relied upon, because the claims, as

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amended, require the pores to be "filled", and as stated in applicant's declaration and arguments, the pores of Carr et al. (US 5,015,373) are not "filled".

Conclusion

4. Applicant's amendment necessitated the new grounds for rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

David Sorkin

December 13, 2002


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700